

- 2 -

1. (Amended three times) A method for cleaning one or more membranes normally immersed in water containing solids and used to produce a filtered permeate comprising:

performing one or more cleaning events per week, each cleaning event having the steps of:

(a) stopping permeation;

(b) flowing a chemical cleaner through the membranes in a direction opposite to the direction in which permeate normally passes through the membranes to provide chemical cleaner in an area in or adjacent the membranes for a period of time; and,

(c) resuming permeation,

wherein

(i) each of the one or more cleaning events has a CT which is equal to (A) the concentration of the chemical cleaner expressed as an equivalent concentration of NaOCl in cleaning efficacy multiplied by (B) the period of time;

(ii) the one or more cleaning events have a weekly CT which is equal to the sum of the CT's of the one or more cleaning events performed in a week and is between 2,000 minutes•mg/L and 30,000 minutes•mg/L; and,

(iii) wherein the concentration, period of time and weekly CT are selected to maintain a stable permeability or reduce the rate of decline in permeability of the membranes over extended periods of time.

2. (twice amended) The method of claim 1 wherein the weekly CT is between 2,000 minutes•mg/L and 20,000 minutes•mg/L.

3. (twice amended) The method of claim 1 wherein the permeate is intended for drinking water and the weekly CT is between 5,000 minutes•mg/L and 10,000 minutes•mg/L.

- 3 -

4. (twice amended) The method of claim 1 wherein the water containing solids is a wastewater and the weekly CT is between 10,000 minutes•mg/L and 30,000 minutes•mg/L.

6. (twice amended) A method for cleaning one or more membranes normally immersed in water containing solids in a tank and used to produce a filtered permeate comprising:

performing cleaning events having the steps of:

(a) stopping permeation;

(b) flowing a chemical cleaner through the membranes in a direction opposite to the direction in which permeate passes through the membranes in repeated pulses of a selected pulse duration separated by waiting periods of a selected waiting period duration, for a period of time; and,

(c) resuming permeation;

wherein

(d) the membranes remain immersed in the water containing solids while the chemical cleaner flows through the membranes;

(e) the outside of the membranes is in fluid communication with the water containing solids;

(f) the selected pulse duration and selected waiting period duration is such that the chemical cleaner remains substantially effective during the waiting period despite decreasing in efficacy from an initial efficacy and is restored to the initial efficacy by the subsequent pulse; and,

(g) the membranes are not agitated while the chemical cleaner is flowed through the membranes.

8. (twice amended) The method of claim 6 wherein

- 4 -

(i) each cleaning event has a CT which is equal to (A) the concentration of the chemical cleaner expressed as an equivalent concentration of NaOCl in cleaning efficacy multiplied by (B) the period of time; and,

(ii) the cleaning events have a weekly CT which is equal to the sum of the CT's of the one or more cleaning events performed in a week and is between 2,000 minutes•mg/L and 30,000 minutes•mg/L}.

9

8. (twice amended) The method of claim 7 wherein the weekly CT is between 2,000 minutes•mg/L and 20,000 minutes•mg/L.

10

8. (twice amended) The method of claim 6 wherein the permeate is intended for drinking water and the weekly CT is between 5,000 minutes•mg/L and 10,000 minutes•mg/L.

11

8. (twice amended) The method of claim 6 wherein the water containing solids is a wastewater and the weekly CT is between 10,000 minutes•mg/L and 30,000 minutes•mg/L.

19

27. (twice amended) A method for cleaning one or more membranes normally immersed in water containing solids and used to produce a filtered permeate comprising:

(A) performing recovery cleanings of the membranes from time to time, the recovery cleanings being at least 15 days apart from each other; and,

(B) between recovery cleanings, performing cleaning events at least once a week, the cleaning events each having the steps of:

(a) stopping permeation;

(b) flowing a chemical cleaner through the membranes in a direction opposite to the direction in which permeate normally passes through the membranes to provide chemical cleaner in an area in or adjacent the membranes for a period of time; and,

- 5 -

(c) resuming permeation,
wherein

- (i) the chemical cleaner in each cleaning event has a concentration between about 20 mg/L and about 200 mg/L when expressed as an equivalent concentration of NaOCl in cleaning efficacy;
- (ii) the period of time of each cleaning event is between about 10 minutes and about 100 minutes;
- (iii) each of the one or more cleaning events has a CT which is equal to (A) the concentration of the chemical cleaner expressed as an equivalent concentration of NaOCl in cleaning efficacy multiplied by (B) the period of time; and,
- (iv) the sum of the CT's of the one or more cleaning events performed in a week is between 2,000 minutes•mg/L and 30,000 minutes•mg/L.

~~20-28~~ (as amended) ¹⁹ The method of claim ~~27~~ wherein the sum of the weekly CT is between 2,000 minutes•mg/L and 20,000 minutes•mg/L.

~~21~~ ¹⁹ ~~29~~ (as amended) The method of claim ~~27~~ wherein the permeate is intended for drinking water and the weekly CT is between 5,000 minutes•mg/L and 10,000 minutes•mg/L.

~~22~~ ¹⁹ ~~30~~ (as amended) The method of claim ~~27~~ wherein the water containing solids is a wastewater and the weekly CT is between 10,000 minutes•mg/L and 30,000 minutes•mg/L.

REMARKS / ARGUMENTS

Claim Rejections - 35 USC 112

The Office Action states that claims 1-4, 7-10 and 27-33 are indefinite. In particular, the Office Action states that the language appearing in step "d" of claim 1, and similar